

REMARKS

Claims 1-14 are in this application and are presented for consideration. By this Amendment, Applicant has amended claim 1. Claim 6 has been canceled. The features found in claim 6, namely the active electrode being a plate shaped electrode, have been added to claim 1. It is Applicant's position that no new issues have been raised as a result of this amendment since the features of claim 6 have already been considered.

Claim 10 has been objected to because of a minor informality.

Applicant has amended claim 10 paying close attention to the Examiner's remarks. Applicant wishes to thank the Examiner for the careful review of the claims.

Claims 1, 6-8 and 14 have been rejected under 35 U.S.C. 102(b) as being anticipated by Wiksell et al. (U.S. 4,846,196).

The present invention relates to an apparatus for non-destructive hyperthermia therapies. The apparatus comprises a generating means for generating radio-frequency electromagnetic radiation. The generating means is connected to an application means such that the radiation is applied to the skin of a living being. The application means comprises an active electrode for contacting the skin portion of the living being. The active electrode is provided with a sensor means for detecting the skin temperature of the skin of the living being. The sensor means includes at least a sensor incorporated in the active electrode. The active electrode is a plate shaped electrode. This advantageously allows the active electrode to be in flat contact with the skin to provide a better contact surface so that more accurate readings of the skin temperature are detected. The apparatus advantageously treats pathologies, such as

rheumatoid inflammations, tendonitis and acute inflammatory forms from a location outside of the living being's skin without damaging or burning the skin. The prior art as a whole fails to provide such features or advantages.

Wiksell et al. discloses a conductor wire inserted in a tumor cavity to form a treatment electrode 2. The electrode 2 is connected to an RF source 4, the other pole of which is connected to an indifferent electrode 6, in the form of a relatively large aluminum foil 6, applied on the skin of the patient's back. In a preferred embodiment, the treatment electrode 2 consists of pellets applied in a sleeve or pocket of large-mesh net material such as nylon. The sleeve or pocket is inserted into the tumor cavity first and thereafter the pellets are inserted through a tube applied in a channel close to the tumor. According to another embodiment, the treatment electrode comprises a flexible conductor which can be inserted into a tumor and wound up to form a ball. The wire may be inserted through a small hole drilled in the skull so as to wind itself into a ball inside the tumor. According to a third embodiment, the treatment electrode comprises an inflatable balloon-like structure which on its outside is provided with an aluminum cover. The balloon-like electrode may be placed within the tumor area and thereafter inflated to fill the whole treating area.

Wiksell et al. fails to teach and fails to suggest the combination of an active electrode that has a plate-shaped surface for contacting the skin of a living being. In fact, Wiksell et al. fails to disclose a non-destructive hyperthermia apparatus. Wiksell et al. merely discloses an apparatus that is devised to kill tumoral cells (Column 1, lines 26-27). However, Wiksell et al. does not disclose an active plate-shaped electrode that engages a skin portion of a living being

as claimed. At most, Wiksell et al. discloses a treatment electrode 2 that is inserted into an internal tumor cavity in an area adjacent to a tumor to destroy tumoral cells. However, the treatment electrode 2 does not contact a skin portion of a living being as claimed. In contrast to Wiksell et al., the plate-shaped active electrode is placed on a skin portion of a living being and applies radiation through the skin of the living being. This advantageously relieves pain from tendinitis, acute inflammatory forms and rheumatoid inflammations via heating without damaging the living being's skin and without having to perform any surgery on the living being. Compared with the present invention, Wiksell et al. discloses a treatment electrode 2 that is surgically implanted in the vicinity of a tumor. However, the treatment electrode 2 is not applied to the skin of a living being such that radiation is transmitted through a skin portion of the living being as claimed.

Wiksell et al. also fails to teach or suggest an active electrode that is plate-shaped for contacting the skin of a living being. At most, Wiksell et al. discloses that the treatment electrode 2 is in the shape of a pellet, a ball or a balloon-like structure. However, Wiksell et al. fails to direct the person of ordinary skill in the art towards an electrode that is plate-shaped as claimed. In contrast to Wiksell et al., the active electrode is a plate-shaped electrode. This advantageously provides the electrode with a large surface area that is in flat contact with a skin portion of living being. This advantageously provides for more accurate readings of the skin temperature of the living being. Wiksell et al. fails to provide such skin contacting advantages since Wiksell et al. only discloses a treatment electrode 2 that is shaped in the form of a balloon or ball, but fails to provide any teaching of a plate-shaped active electrode as claimed. As such,

Applicant respectfully requests that the Examiner favorably consider claims 1 and 14 as now presented and all claims that respectively depend thereon.

Claims 4, 11 and 12 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Wiksell et al. in view of Cosman et al. (U.S. 2002/011617). The rejection is based on the position that Wiksell et al. discloses all the features as required by the-base claim. However, as noted above, the invention includes a combination of features which is neither taught nor suggested by the prior art including Wiksell et al. and Cosman et al. The claims which depend on claim 1 also patentably define over the prior art including Wiksell et al. and Cosman et al.. Accordingly, reconsideration of each of the rejections is requested.

Claims 5, 9 and 10 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Wiksell et al. in view of Takayama et al. (U.S. 5,003,991). Although Takayama et al. teaches a hyperthermia apparatus for heating a cancer using an electrode inserted into a cavity of a patient, the references as a whole fail to suggest the combination of features claimed. Specifically, the references as a whole fail to suggest the combination of an active, plate-shaped electrode that has a skin contacting surface for contacting the skin of a living being. The references do not suggest the invention and therefore all claims define over the prior art as a whole.

Favorable consideration on the merits is requested.

Respectfully submitted
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